

REMARKS

By this Amendment, claim 39 has been amended without any intention of narrowing the scope of what is being claimed, but merely to correct the claim dependency of claim 39 and to conform with the claim from which it depends. No claims have been cancelled or newly added. Thus, claims 1-3, 6-46 and 48-53 remain pending. Reconsideration and allowance of all the claims pending in the application are respectfully requested in view of the foregoing amendments and the following comments.

Claims 32, 33 and 50 have not been specifically addressed in the Office Action. Applicant respectfully requests that the status of these claims be clarified. Moreover, claims 29, 31 and 49 were not specifically listed in the grouping of claims identified in the statement of rejection in sections 3 and 4 of the Office Action, but were discussed in the body of those respective rejections. For the sake of completeness, Applicant has addressed claims 29, 31 and 49 below; however, if the present rejections are maintained, Applicant respectfully requests that these matters be clarified in a new non-final Office Action so that Applicant can properly respond to any new rejections.

Claims 20-23, 26, 27, 30, 34-37, 42-46, 48, 49, 51 and 52 were rejected under 35 U.S.C. §103(a) as being obvious over United States Patent No. 7,092,069 to Schuster ("Schuster") in view of United States Patent No. 4,200,794 to Newberry *et al.* ("Newberry"). Applicant respectfully traverses this rejection for at least the following reasons.

As was previously discussed in the Amendment dated January 9, 2007, Applicant maintains that Schuster is unavailable as prior art. Schuster was filed July 9, 2004 and first published on February 10, 2005, while the present application was filed November 24, 2003. Therefore, Applicant respectfully requests that any and all rejections based on Schuster should be withdrawn. If these rejections are maintained by relying on Schuster, Applicant requests a detailed explanation as to how any of the priority applications of Schuster may be used as prior art and furthermore support the cited portions of Schuster or otherwise support rejection of the claims.

Applicant has taken a brief look at the priority applications of Schuster. United States Patent Application No. 10/210,051, now United States Patent No. 6,878,916, does not provide any figure(s) corresponding to Figure 2 of Schuster which shows lens 14 cited in the

Office Action. Similarly, the International Patent Application No. PCT/EP02/04846, which published as International Published Patent Application No. WO 03/077036 on September 18, 2003 in the German language, does not provide any figure(s) corresponding to Figure 2 of Schuster, either.

Even assuming *arguendo* that Schuster is prior art, Schuster, as admitted in the Office Action, does not disclose how lens 14 is mounted to the support. Office Action, page 2. Indeed, the cited portions of Schuster fail to discuss any joint element structure or materials. Therefore, Applicant submits that the cited portions of Schuster fail to disclose, teach or render obvious a lithographic apparatus comprising, *inter alia*: “a fluid tight joint between an element of the projection system and its support comprises a direct bond by which molecules of the element and its support chemically interact” as recited by claim 20 or “a direct bond, by which molecules of the lens and the lens support chemically interact, providing a fluid tight seal between the lens and the lens support” as recited by claim 42. Similarly, the cited portions of Schuster fail to disclose, teach or render obvious an immersion projection system manufacturing method comprising, *inter alia*: “joining an element of a projection system, that in use in a lithographic apparatus comes in contact with a liquid, with its support using an inorganic layer comprising (i) metal, (ii) ceramic, (iii) glass, or (iv) any combination of (i) – (iii), and glue protection, direct bonding, or both” as recited by claim 46.

Further, even assuming *arguendo* that the cited portions of Newberry and Schuster are properly combinable (which Applicant does not concede), the cited portions of Newberry fail to overcome the shortcomings of the cited portions of Schuster. Newberry discloses a combined fine focusing micro lens array and micro deflector assembly for use in electron beam tubes of the fly’s eye type. *See*, Abstract of Newberry. In particular, cited portions of Newberry disclose bonding a lens plate of the lens array to a glass support rod. *See*, column 5, lines 16-21 of Newberry.

Applicant submits that the cited portions of Newberry do not disclose, teach, or render obvious a lithographic apparatus comprising, *inter alia*, “a fluid tight joint between an element of the projection system and its support comprises a direct bond by which molecules of the element and its support chemically interact” as recited by claim 20 (emphasis added) or “a direct bond, by which molecules of the lens and the lens support chemically interact, providing a fluid tight seal between the lens and the lens support” as recited in claim 42 (emphasis added). Indeed, the cited portions of Newberry make no mention of using the lens plate in, for example, a liquid or other fluid environment much less the possibility of, for

example, liquid or other fluid entering between the lens plate and the glass support rod. Applicant could not find a single use of the words “liquid” or “fluid” in Newberry. Moreover, the Office Action makes no reference in Newberry that the asserted Newberry bond involves molecules of the lens plate and the glass support rod chemically interacting.

Similarly, the cited portions of Newberry fail to disclose, teach or render obvious an immersion projection system manufacturing method comprising, *inter alia*, “joining an element of a projection system, that in use in a lithographic apparatus comes in contact with a liquid, with its support using an inorganic layer comprising (i) metal, (ii) ceramic, (iii) glass, or (iv) any combination of (i) – (iii), and glue protection, direct bonding, or both” as recited by claim 46 (emphasis added). At best, the cited portions of Newberry may disclose the joint between the lens plate and the glass support rod is formed by one of these methods, but not a combination of methods as claimed.

Furthermore, the Office Action states “the lens used in the Schuster apparatus may [have] used [Newberry’s] affixing method.” Applicant submits that this is not the requisite and proper analysis as to why one of ordinary skill in the art would combine the cited elements of Schuster and Newberry. *See KSR Int’l. Co. v. Teleflex, Inc.*, No. 04-1350, slip opinion at page 14 (U.S. Apr. 30, 2007) (a determination, with supporting evidence, must be made as to “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit”). Instead, the Office Action merely offers a conclusory statement that Schuster’s lens may be affixed to a support, which Schuster does not disclose, using the method of Newberry. This is clearly inadequate under the Supreme Court’s *KSR* decision since the Office Action cites absolutely nothing which supports such a conclusion. In addition, a mere statement that a purported modification allows a particular capability is not a sufficient basis for an obviousness determination. Absent a teaching within the references themselves, or in the knowledge generally available to one of ordinary skill in the art, suggesting a desirability of applying Newberry’s bond method within the particular context of Schuster’s arrangement and in the particular manner posited by the Office Action, the purported modification is legally incapable of supporting an obviousness determination.

Therefore, Applicant respectfully submits that a *prima facie* case of obviousness has not been established and that the cited portions of Schuster, Newberry, or any proper combination thereof, fail to disclose, teach or render obvious each and every element recited by claims 20, 42, and 46. Claims 21-23, 26, 27, 30, 34-37, 43-45, 48, 49, 51 and 52 depend

respectively from claims 20, 42 and 46 and are, therefore, patentable for at least the same reasons provided above claims 20, 42 and 46 respectively, and for the additional features recited therein. Thus, Applicant respectfully requests that the rejections of claims 20-23, 26, 27, 30, 34-37, 42-46, 48, 49, 51 and 52 under §103(a) over Schuster in view of Newberry be withdrawn and the claims be allowed.

Claims 1-3, 6-19, 24-29, 31, 38-41, 46 and 51-53 were rejected under 35 U.S.C. § 103(a) as being obvious over Schuster either alone or in view of United States Patent Application Publication No. 2002/0186937 to LeFlohic *et al.* (“LeFlohic”). Applicant respectfully traverses this rejection for at least the following reasons.

First, the Office Action has rejected dependent claims 24-29 and 31 over Schuster either alone or in view of LeFlohic without addressing or rejecting claim 20. Applicant request that the status of claim 20 be clarified. Merely for the sake of completeness, claim 20 will be addressed in the discussion below.

As discussed above, Applicant submits Schuster is unavailable as prior art. Even assuming *arguendo* that Schuster is prior art, the cited portions of Schuster still fail to disclose, teach, or render obvious claims 1, 20, 38 and 46, as discussed above and below.

As discussed above and admitted in the Office Action, the cited portions of Schuster are silent as to how lens 14 is mounted to the support. Indeed, the cited portions of Schuster fail to discuss any joint element structure or materials. Therefore, for similar reasons as discussed above with respect to claim 46, Applicant submits that the cited portions of Schuster fail to disclose, teach or render obvious a lithographic apparatus comprising, *inter alia*: “a joint between an element of the projection system and its support comprises an inorganic layer comprising (i) metal, (ii) ceramic, (iii) glass, or (iv) any combination of (i) – (iii), and comprises glue protection” as recited by claim 1. Further, as discussed above, Applicant submits that the cited portions of Schuster fail to disclose, teach or render obvious a lithographic apparatus comprising, *inter alia*: “a fluid tight joint between an element of the projection system and its support comprises a direct bond by which molecules of the element and its support chemically interact” as recited by claim 20 or “a fluid tight seal between the lens and the lens support wherein the seal was made without heating” as recited by claim 38. Also, as discussed above, the cited portions of Schuster fail to disclose, teach or render obvious an immersion projection system manufacturing method comprising, *inter alia*: “joining an element of a projection system, that in use in a lithographic apparatus comes in

contact with a liquid, with its support using an inorganic layer comprising (i) metal, (ii) ceramic, (iii) glass, or (iv) any combination of (i) – (iii), and glue protection, direct bonding, or both” as recited by claim 46.

Further, even assuming *arguendo* that the cited portions of LeFlohic and Schuster are properly combinable (which Applicant does not concede), the cited portions of LeFlohic fail to overcome the shortcomings of the cited portions of Schuster. LeFlohic discloses an optical component including a double sheath optical fiber for transverse optical coupling with a semiconductor diode. *See* paragraph [0011] of LeFlohic. In particular, the cited portions of LeFlohic disclose a hybrid multiplexer optical coupling component including a coupling lens 3, which is affixed with glue on a glass support. *See* paragraph [0034] of LeFlohic.

Applicant submits that the cited portions of LeFlohic fail to disclose, teach or render obvious a lithographic apparatus comprising, *inter alia*: “a joint between an element of the projection system and its support comprises an inorganic layer comprising (i) metal, (ii) ceramic, (iii) glass, or (iv) any combination of (i) – (iii), and comprises glue protection” as recited by claim 1 (emphasis added). Similarly, the cited portions of Schuster fail to disclose, teach or render obvious an immersion projection system manufacturing method comprising, *inter alia*: “joining an element of a projection system, that in use in a lithographic apparatus comes in contact with a liquid, with its support using an inorganic layer comprising (i) metal, (ii) ceramic, (iii) glass, or (iv) any combination of (i) – (iii), and glue protection, direct bonding, or both” as recited by claim 46 (emphasis added). At best, the cited portions of LeFlohic may disclose the joint between the lens and the support is formed by one of these methods, but not a combination of methods as claimed.

Moreover, the cited portions of LeFlohic do not disclose, teach or render obvious a lithographic apparatus comprising, *inter alia*, “a fluid tight joint between an element of the projection system and its support comprises a direct bond by which molecules of the element and its support chemically interact” as recited by claim 20 (emphasis added) or “a fluid tight seal between the lens and the lens support wherein the seal was made without heating” as recited by claim 38 (emphasis added). Indeed, the cited portions of LeFlohic make no mention of using the lens in, for example, a liquid or other fluid environment much less the possibility of, for example, liquid or other fluid entering between the lens and the support. Applicant could not find a single use of the words “liquid” or “fluid” in LeFlohic. Moreover, the Office Action makes no reference in LeFlohic that the asserted LeFlohic glue method involves molecules of the lens and the support chemically interacting.

The Office Action states “[o]ne of ordinary skill in the art would be motivated to use the known method [of LeFlohic] to mount the optical elements of the Schuster et al. apparatus.” Office Action, page 3. However, mere conclusory remarks such as these are impermissible grounds for establishing a *prima facie* case of obviousness. For example, Applicant submits that the Office Action has not established, with proper evidence, that the prior art suggests the desirability of the combination. As discussed above, this is clearly inadequate under the Supreme Court's *KSR* decision since the Office Action cites absolutely nothing which supports such a conclusion.

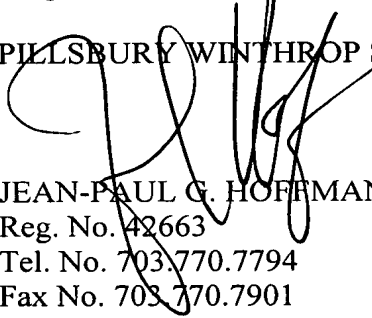
Therefore, Applicant respectfully submits that a *prima facie case* of obviousness has not established and that the cited portions of Schuster, LeFlohic, or any proper combination thereof, fail to disclose, teach or render obvious each and every element recited by claims 1, 20, 38, and 46. Claims 2, 3, 6-19, 24-29, 31, 39-41 and 51-53 depend respectively from claims 1, 20, 38 and 46 and are, therefore, patentable for at least the same reasons provided above regarding claims 1, 20, 38 and 46 respectively, and for the additional features recited therein. Thus, Applicant respectfully requests that the rejections of claims 1-3, 6-19, 24-29, 31, 38-41, 46 and 51-53 under §103(a) over Schuster in view of LeFlohic be withdrawn and the claims be allowed.

All rejections have been addressed. It is respectfully submitted that the present application is in condition for allowance, and a notice to that effect is earnestly solicited. Should there be any questions or concerns regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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